(No Model.)

F. LEVASSEUR.

TUBE CUTTER.

No. 442,125. Patented Dec. 9, 1890.

Fig. 1.

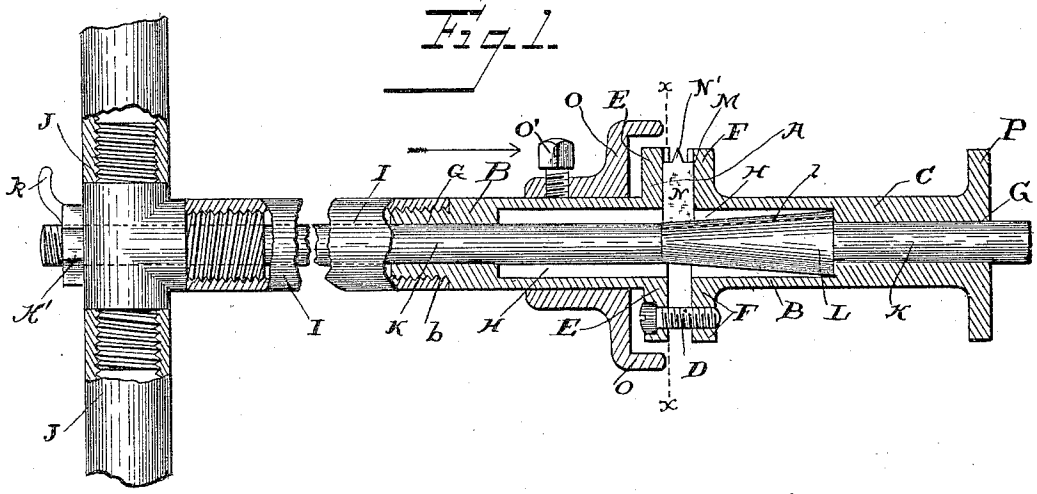


Fig. 2.

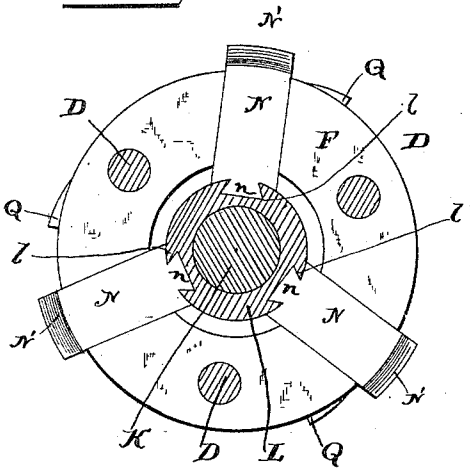


Fig. 3.

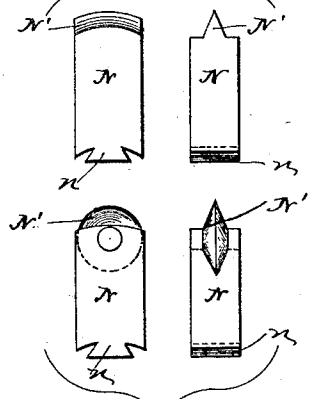


Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANK LEVASSEUR, OF GOUVERNEUR, NEW YORK, ASSIGNOR TO THE GOUVERNEUR MACHINE COMPANY, OF NEW YORK.

TUBE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 442,125, dated December 9, 1890.

Application filed August 27, 1890. Serial No. 363,216. (No model.)

To all whom it may concern:

Be it known that I, FRANK LEVASSEUR, a citizen of the United States, residing at Gouverneur, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Tube-Cutters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in tube or flue cutters; and it has for its objects the production of a tool for this purpose which will be simple in construction and operation and render more efficient this class of tools.

To these ends, and to such others as the invention may pertain, the same consists of certain novel constructions and combinations of parts, all as more fully hereinafter described, shown in the drawings, and then pointed out in the claims.

Figure 1 of the drawings is a side elevation of my invention with parts in section. Fig. 2 is a cross-section taken on the line *x x*, Fig. 1, on an enlarged scale, looking in the direction of the arrow. Fig. 3 is one form of the cutter. Fig. 4 is another form of the cutter.

Referring to the drawings, A represents the stock of the tool, composed of the two sections B and C. These sections are firmly bolted together by means of the bolts or screws D, passing through the annular flanges E and F in the meeting ends of the two sections.

The longitudinal chamber G passes through stock A and is enlarged in diameter at H, for a purpose which will hereinafter appear. Section B is screw-threaded on its outer end, as at *b*, to admit of the tube I screwing thereon. This tube may be of any desired length, and is provided on its free end with a T, on which screw two short sections of pipe, which form the handle J for operating the tool.

Passing through the chamber G and the opening through the tube I is a rod K, which is screw-threaded on its end adjacent to the handle J to receive the nut K′. This nut is provided with a suitable handle *k*. A cone-shaped mandrel L is formed on the rod K and is of sufficient diameter at its larger end to snugly fit the enlarged portion H of the chamber G and slide freely therein. Dovetail grooves *l* are cut in the face of said mandrel, and correspond in number to the cutters used.

In the face of flange F of section C are cut the radial grooves M, in which slide boxes or shanks N for carrying cutters N′. These boxes are provided on their inner ends with projections or tongues *n*, which are of the same shape as the groove *l* in the face of the mandrel and are designed to slide therein. The cutters N′ may be formed integral with the boxes or shanks N, or may be rotary and pivoted therein, as shown in Fig. 4.

A collar O slides loosely upon section B of the stock, and is secured in any desired position thereon by means of the binding-screw O′. This collar serves as a gage for cutting the tubes the desired distance from the tube-sheet or end of the boiler.

The section C of the stock is provided on its outer end with flange P, which is of the diameter of the tube to be cut and holds the tool in proper position in the tube when in use.

The stationary knives Q, formed on the periphery of flange F, are for the purpose of removing any burrs that may be in the pipe or tube or which may be left by the cutters.

The operation of my invention is as follows: The stock A of the tool is inserted into the tube to be cut until the collar O, which has been previously adjusted, strikes the tube-sheet or end of the boiler. The handle J is then revolved from left to right. The nut K′ being held stationary by means of the handle *k* and the rod K revolving with the stock as it is turned, the rod is drawn toward the handle, carrying with it the mandrel, whereby the boxes or shanks N are forced outwardly by means of the projections *n* working in the dovetail grooves *l* of the mandrel L, and the cutters are forced against the tube more and more at each successive revolution until the tube is cut. To withdraw the tool it is only necessary to reverse the operation described. The boxes or shanks N working in the dove-

tail grooves are drawn into the stock of the tool when the mandrel is forced away from the handle back into its original position.

I have described what I consider to be the best construction of each part and arrangement of the several parts, but do not mean to restrict myself to such details, as changes may be made therein without departing from the spirit of the invention illustrated by such details.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tube-cutter, the combination, with a stock and laterally-movable cutters, of means for rotating the cutters to cut the tube and simultaneously feed them laterally, substantially as described.

2. In a tube-cutter, the combination, with a stock and laterally-movable cutters, of a mandrel of varying proportions acting on said cutters to move them laterally and rotatable with the cutters, and means for moving said mandrel longitudinally simultaneously with the rotation of the cutters, substantially as and for the purposes set forth.

3. In a tube-cutter, the combination, with the stock and laterally-movable cutters, of the mandrel of varying proportions acting on the cutters to move them laterally, a threaded rod connected with the mandrel, and a nut on the threaded portion of the rod, whereby when said nut is held stationary and the stock is turned the cutters will be rotated and simultaneously fed laterally, substantially as described.

4. In a tube-cutter, the combination of the sectional stock having a chamber formed in both sections and carrying laterally-movable cutters, a reciprocating mandrel of varying proportions fitting in the chamber of said sections and having a dovetail connection with said cutters, a rod connected with said mandrel and having a portion threaded, and a nut fitting to said threaded portion and serving to move said mandrel longitudinally when the stock is turned to rotate the cutters, substantially as and for the purposes set forth.

5. In a tube-cutter, the combination, with the stock and laterally-movable cutters, of cutters on the face of a portion of the stock to remove burrs from the interior of the tube, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK LEVASSEUR.

Witnesses:
J. B. JOHNSON,
W. P. STACY.